

CLAIMS

What is claimed is:

- 5 1. A vehicle closure member hingeably connected to a vehicle and arranged to pivot to a generally open horizontal position, the closure member comprising:
 - an internal cavity formed therein;
 - at least one orifice positioned in an external surface of the closure member;
 - a track mechanism disposed in the internal cavity in alignment with the at least
 - 10 one orifice;
 - a step member engaged with the track mechanism and arranged to slideably extend through the orifice and pivot to a deployed position to provide a vehicle step when the closure member is in the generally open horizontal position; and
 - an interlock assembly engageable by the step member and arranged to prevent
 - 15 closing of the vehicle closure member when the step member is in the deployed position.
2. The closure member of claim 1, wherein the step member comprises:
 - a first leg having an inboard portion and an outboard portion;
 - 20 a second leg having an inboard portion and an outboard portion, wherein the first and second legs are arranged to interface with the at least one orifice; and
 - a joining segment, wherein the joining segment is arranged to connect the first and second outboard leg portions thereby forming a continuous U-shaped step member.
- 25 3. The closure member of claim 2, wherein hinges are incorporated into the first and second step member leg portions hingeably connecting the inboard and outboard portions of each step member leg, the hinges are arranged to slide in and out of the internal cavity in conjunction with each respective leg, and allow the respective outboard portions to pivot from a generally
- 30 horizontal extended position to a generally vertical position as the hinges move out of the internal cavity when the step member is deployed.

4. The closure member of claim 3, wherein the hinges are positioned to provide clearance to the closure member when the step member is deployed and pivoted to the generally vertical position.

5. The closure member of claim 2, wherein the distance from the step member joining segment in a generally vertical deployed position to the ground is half the distance from the closure member in the generally open horizontal position to the ground.

6. The closure member of claim 2, wherein the joining segment when in the deployed position is substantially parallel to the ground.

7. The closure member of claim 2, wherein the joining segment is positioned contiguous to and substantially flush to the closure member when the step member is in a stowed position.

8. The closure member of claim 2, wherein the joining segment further includes an access hole to facilitate deployment of the step member.

9. The closure member of claim 2, further comprising:

at least one stop pin attached to the inboard leg portion of at least one of the first and second step member leg inboard leg portions, wherein the at least one stop pin is arranged to engage the at least one retention slot positioned in the at least one track to prevent the first and second step member inboard leg portions from extending beyond the external end of the track when the step member is deployed from the closure member.

10. The closure member of claim 1, wherein the step member is arranged to pivot 90 degrees from a generally horizontal position to a generally vertical position.

11. The closure member of claim 1, wherein the track mechanism comprises:

a first track; and

a second track each having an end positioned in the internal cavity to interface with the at least one orifice.

12. The closure member of claim 11, wherein each of the first and second tracks have a length greater than the first and second step member outboard leg portions.

13. The closure member of claim 11, wherein the step member inboard and outboard leg portions are slideably engaged with the respective first and second tracks.

14. The closure member of claim 11, wherein the track mechanism further comprises a retention slot positioned in at least one of the first and second tracks, the retention slot being confined by the internal and external ends of the at least one of the first and second tracks.

15. The closure member of claim 1, wherein the step member assembly is concealed in its stowed position when the closure member is in the closed position.

16. The closure member of claim 1, wherein the interlock assembly further comprises:

a bell crank lever arm; and

a spring loaded interlock shaft biased to a non-translated position, the bell crank lever arm is engageable by a step member leg portion and is arranged to translate the interlock shaft through a hole in the closure member into an adjacent hole in the vehicle thereby locking the vehicle closure member in the generally open horizontal position when the step member is in the deployed position.